

Los Alamos National Laboratory
Environmental Restoration Program
Standard Operating Procedure

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Collection of Sand, Packed Powder, or Granule Samples
Using the Hand Auger

Preparer: Sandra E. Wagner Sandra E. Wagner 10-16-91
(Print Name) (Signature) (Date)

Quality Review by: Philip R. Fresquez Philip R. Fresquez 10-23-91
(Print Name) (Signature) (Date)

Technical Review by: Juan Corpron J Corpron 11/19/91
(Print Name) (Signature) (Date)

QPPL Approval: Karen L Warthen Karen L Warthen 3/3/92
(Print Name) (Signature) (Date)

PM Approval: Robert W Vocke Robt W Vocke 3-4-92
(Print Name) (Signature) (Date)

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COLLECTION OF SAND, PACKED POWDER, OR GRANULE SAMPLES USING THE HAND AUGER

1.0 PURPOSE

This procedure describes the use of the hand auger for the collection of samples in sand, packed powders, or granules.

2.0 SCOPE

2.1 Applicability

This procedure is applicable to all site workers who are involved in hand auger borings and sample collection in sand, packed powders, or granules for the Environmental Restoration program.

2.2 Training

All site workers involved with this procedure should document that they have read and understand this and the procedures in Section 1.0, General Instructions.

3.0 DEFINITIONS

N/A

4.0 BACKGROUND AND/OR CAUTIONS

Hand auger borings provide a simple method of waste investigation and sampling. They may be used for obtaining disturbed samples of sand or packed powders and granules. An illustration of a typical hand auger is shown in Attachment A.

The hand auger is particularly useful in collecting samples at depths greater than 3 inches (8 cm). This sampler destroys the structure of cohesive waste and does not distinguish between material collected near the surface or toward the bottom. Therefore, it cannot be used to collect an undisturbed soil sample. Proper back care must be exercised when pulling a stuck auger out of a hole and turning the auger for long periods of time. Work gloves may be needed to prevent blisters.

Site workers preparing for field operations should read and understand the procedures outlined in LANL-ER-SOPs, Section 2.0, Health and Safety in the Field. In addition, site workers should refer to site-specific Operable Unit Health and Safety plans for the particular health and safety equipment to be used.

5.0 EQUIPMENT

Refer to Attachment B, Equipment and Supplies Checklist, for a list of equipment used in this procedure.

6.0 PROCEDURE

- A. Coordinate sampling efforts with the Sample Coordination Facility.
- B. Assemble the equipment and supplies. Ensure the proper operation of all sampling equipment.
- C. Decontaminate all sampling equipment before taking the first sample and between sampling intervals (SOP-02.07, General Equipment Decontamination).
- D. Assemble the auger with the desired length shaft. Put Teflon™ tape on all threads to facilitate disassembly.
- E. Remove any undesired surficial material from the sample location.
- F. Begin augering, periodically gather the material that collects around the bore hole, then lift the auger out of the hole and remove the sample material from the auger flights. Put the sample material in the pan. Continue until the desired depth or required sample volume is reached, then put the sample into the sample containers.
- G. Label sample containers and complete documentation (SOP-01.04, Sample Control and Field Documentation).
- H. Decontaminate equipment (SOP-02.07). Pack samples and ship them to the laboratory per SOP-01.03, Handling, Packaging, and Shipping of Samples. Return all supplies and equipment to their proper storage location, and notify the equipment manager of any malfunction or damage.
- I. Whenever a sample is collected for chemical analyses, a custody record must be initiated on the Chain-of-Custody/Request for Analysis form, and a Soil Sample Identification Label affixed to the sample container, (SOP-01.04).
- J. Whenever a sample is collected, complete a description of the sample using the Borehole Log (Soil) form. An example of this form and instructions for completing this form are supplied in SOP-06.12, Soil and Rock Borehole Logging and Sampling Methods. Additional field comments should be noted in the Daily Activity Log (SOP-01.04).
- K. If required, be sure a Teflon™ liner is present in the cap. Secure the cap tightly onto the sample container. Preserve the sample container with ice or in a refrigerator. Freezing

may be required. Consult SOP-01.03, Handling, Packaging, and Shipping of Samples, and SOP-01.02, Sample Containers and Preservation.

7.0 REFERENCES

The following procedures directly are associated with this procedure and should be reviewed before field operations:

LANL-ER-SOPs in Section 1.0, General Instructions.

LANL-ER-SOPs in Section 2.0, Health and Safety in the Field.

LANL-ER-SOP-06.12, Soil and Rock Borehole Logging and Sampling Methods.

EPA. November 1986. "Test Methods for Evaluating Solid Waste", Vol. II: Field Manual Physical/Chemical Methods, Washington, D.C. Office of Solid Waste and Emergency Response.

8.0 RECORDS

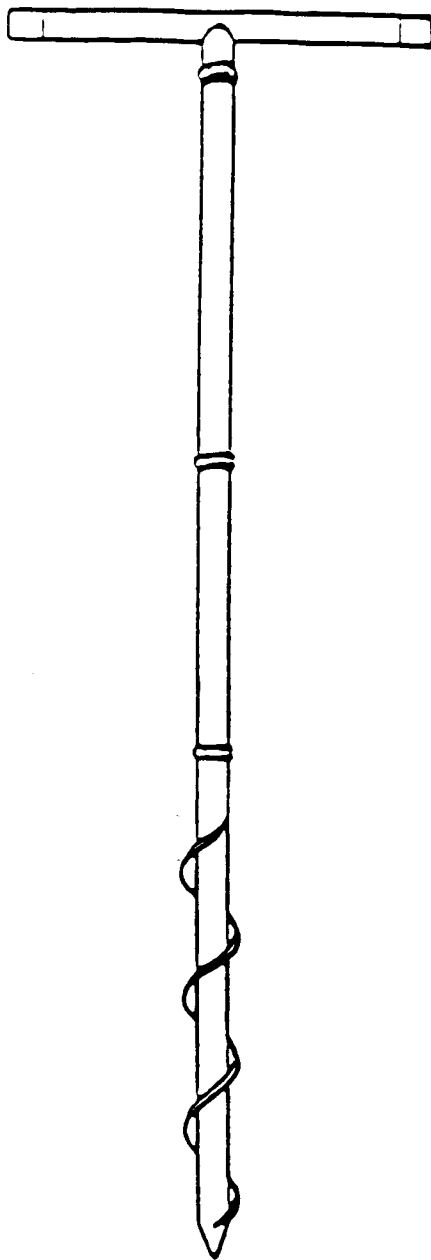
Records generated during this procedure include the following forms, completed:

- A. Containerized Waste Sampling Forms or Borehole Log (Soil) Form
- B. Daily Activity Log
- C. Chain-of-Custody/Request for Analysis Form
- D. Sample Collection Log

9.0 ATTACHMENTS

- A. Hand Auger
- B. Equipment and Supplies Checklist for Hand Augering

HAND AUGER



EQUIPMENT AND SUPPLIES CHECKLIST FOR HAND AUGERING

For soil sampling with hand augers:

- _____ Drill rods
- _____ T handle
- _____ Auger
- _____ Bucket type
- _____ Continuous flight
- _____ Posthole
- _____ Sample container(s)
- _____ Decontamination equipment
- _____ Sprayer
- _____ Distilled water
- _____ Scrub brush
- _____ Pan (stainless steel or glass)
- _____ Ethanol
- _____ Disposable laboratory gloves
- _____ Work gloves
- _____ Combustible gas indicator
- _____ Portable photoionization detector (PID) or flame
ionization detector (FID)
- _____ Blue Ice or equivalent
- _____ Cooler

**EQUIPMENT AND SUPPLIES CHECKLIST
FOR HAND AUGERING**

- _____ Plastic sheet
- _____ Daily Activity Logs
- _____ Chain-of-Custody/Request for Analysis form
- _____ Sample Collection Log
- _____ Variance Logs
- _____ Custody Seals
- _____ Unique Sample Stickers
- _____ Sample Labels